



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
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Canada

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(4)

D119-796-141TRN
Job Sheet 198919



Part No: D119-796-141TRN

Job Qty: 1 pcs

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 8/7/19

Job Tracking No:

Due Date: 8/21/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: D119-796-141 REV H IPP REV A RQ 14/06/06 VERIFIED BY DD IPP REV:B 16.05.04 AS PER DWG REV.H
DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier			
100	Mori Seiki TL-40 - 1	1 pcs		8/21/19	1.00	1.52	Mori Seiki TL-40 - 1			DAS 662019-08-20 9-89
110	QC 2	1 pcs		8/21/19	0.00	0.00	QC 2 - 1			
							QC 2 - 12			
							QC 2 - 14			
							QC 2 - 17			
							QC 2 - 19			
							QC 2 - 2			
							QC 2 - 20			
							QC 2 - 22			
							QC 2 - 23			
							QC 2 - 25			
							QC 2 - 32			
							QC 2 - 33			
							QC 2 - 35			
							QC 2 - 39			
							QC 2 - 4			
							QC 2 - 40			
							QC 2 - 44			
							QC 2 - 45			
							QC 2 - 48			
							QC 2 - 49			
							QC 2 - 50			
							QC 2 - 51			
							QC 2 - 52			
							QC 2 - 57			
							QC 2 - 62			
							QC 2 - 63			
							QC 2 - 8			DAS
							QC 2 - 66			662019-08-20
							QC 2 - 64			9-89

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					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	8/21/19	1.00 1.52	Mori Seiki TL-40 - 1 - B4B	DAS 66 2019-08-21 9-89
130	QC 2	1 pcs	8/21/19	0.00 0.00	QC 2 - 1	
					QC 2 - 12	
					QC 2 - 14	
					QC 2 - 17	
					QC 2 - 19	
					QC 2 - 2	
					QC 2 - 20	
					QC 2 - 22	
					QC 2 - 23	
					QC 2 - 25	
					QC 2 - 32	
					QC 2 - 33	
					QC 2 - 35	
					QC 2 - 39	
					QC 2 - 4	
					QC 2 - 40	
					QC 2 - 44	
					QC 2 - 45	
					QC 2 - 48	
					QC 2 - 49	
					QC 2 - 50	
					QC 2 - 51	
					QC 2 - 52	
					QC 2 - 57	
					QC 2 - 62	
					QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	DAS 66 2019-08-21 9-89
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
140	QC 8	1 pcs	8/21/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	

					QC 8 - 67	DAS
					QC 8 - 1 (A)	47
					QC 8 - 47	9-88
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
					Crosstubes - 1 - B4B	
145 Crosstubes - 2 - B4B	1 pcs	8/21/19	0.00 0.33		Crosstubes - 2 - B4B	BB 9/5/2019
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
150 Handfinish - 1-1 Chemical-B4B	1 pcs	8/21/19	0.00 0.40		Handfinish - 1 - 1 - B4B	
					Handfinish - 1 - 2 - B4B	
					Handfinish - 1 - 3 - B4B	SEP. 19 2019
					Handfinish - 1 - 4 - B4B	
					Handfinish - 1 - 5 - B4B	
					Handfinish - 1 - 6 - B4B	
					Handfinish - 1 - 7 - B4B	
					Handfinish - 1 - 8 - B4B	
					Handfinish - 1 - 9 - B4B	
					Handfinish - 1 - 10 - B4B	
					Handfinish - 1 - 11 - B4B	
					Handfinish - 1 - 12 - B4B	
					Handfinish - 1 - 13 - B4B	
					Handfinish - 1 - 14 - B4B	
					Handfinish - 1 - 15 - B4B	
					Handfinish - 1 - 16 - B4B	
					Handfinish - 1 - 17 - B4B	
					Handfinish - 1 - 18 - B4B	
					Handfinish - 1 - 19 - B4B	
					Handfinish - 1 - 20 - B4B	
					Handfinish - 1 - 21 - B4B	
					Handfinish - 1 - 22 - B4B	
160 QC 7	1 pcs	8/21/19	0.00 0.00		QC 7 - 10	
					QC 7 - 13	
					QC 7 - 14	
					QC 7 - 15	
					QC 7 - 17	
					QC 7 - 18	
					QC 7 - 19	
					QC 7 - 2	
					QC 7 - 28	
					QC 7 - 3	
					QC 7 - 30	
					QC 7 - 34	
					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	
					QC 7 - 40	

170 Packaging 3-1 - Stock - B4B	1 pcs	8/21/19	0.00 0.00	QC 7 - 24	
				QC 7 - 43	
				QC 7 - 61	
				QC 7 - 81	
				Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	19-10-11
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
180 QC 21 - FG	1 pcs	8/21/19	0.00 0.00	QC 21 - FG - 21	
				QC 21 - FG - 70	
				QC 21 - FG - 53	

Part Op 100 - 1-Fill tube with sand & install plugs on both ends as per Folio FB316 2-Turn first side as per Folio FB316 3-Blend
 Descriptions: transition lines only, **do not sand whole tube**: FOLIO REV: H DWG REV: H *Use mill bastard
 file, brush file repeatedly with file card. *Do not use sandpaper coarser than 320 grit.
 110 - (QC2- Inspect parts off machine FAI/FAIB)
 120 - 1-Turn second side as per Folio FB316 2-Blend transition lines only, **do not sand whole tube**: 3-Remove sand
 and plugs 4- scribe batch # and part # as per dwg
 130 - (QC2- Inspect parts off machine FAI/FAIB)
 140 - (QC8- Inspect parts - second check)
 145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.
 150 - 1- handfinish X-TUBE INSIDE AND OUT 2- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT. USE RED
 SCOTCH BRITE
 160 - (QC7-Inspect Chemical Conversion Coat)
 170 - (Identify as per dwg & Stock Location: _____) LOCATION : LG014
 180 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6024-103	Crosstube Material	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	F150 132

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Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6024-103	1	7	0
Part Specifications				
Specifications could not be found.				

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Container No: S207144



Part: D119-796-141TRN

Job No: 198919

Serial No/Batch: S207144

Revision: H

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 813 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

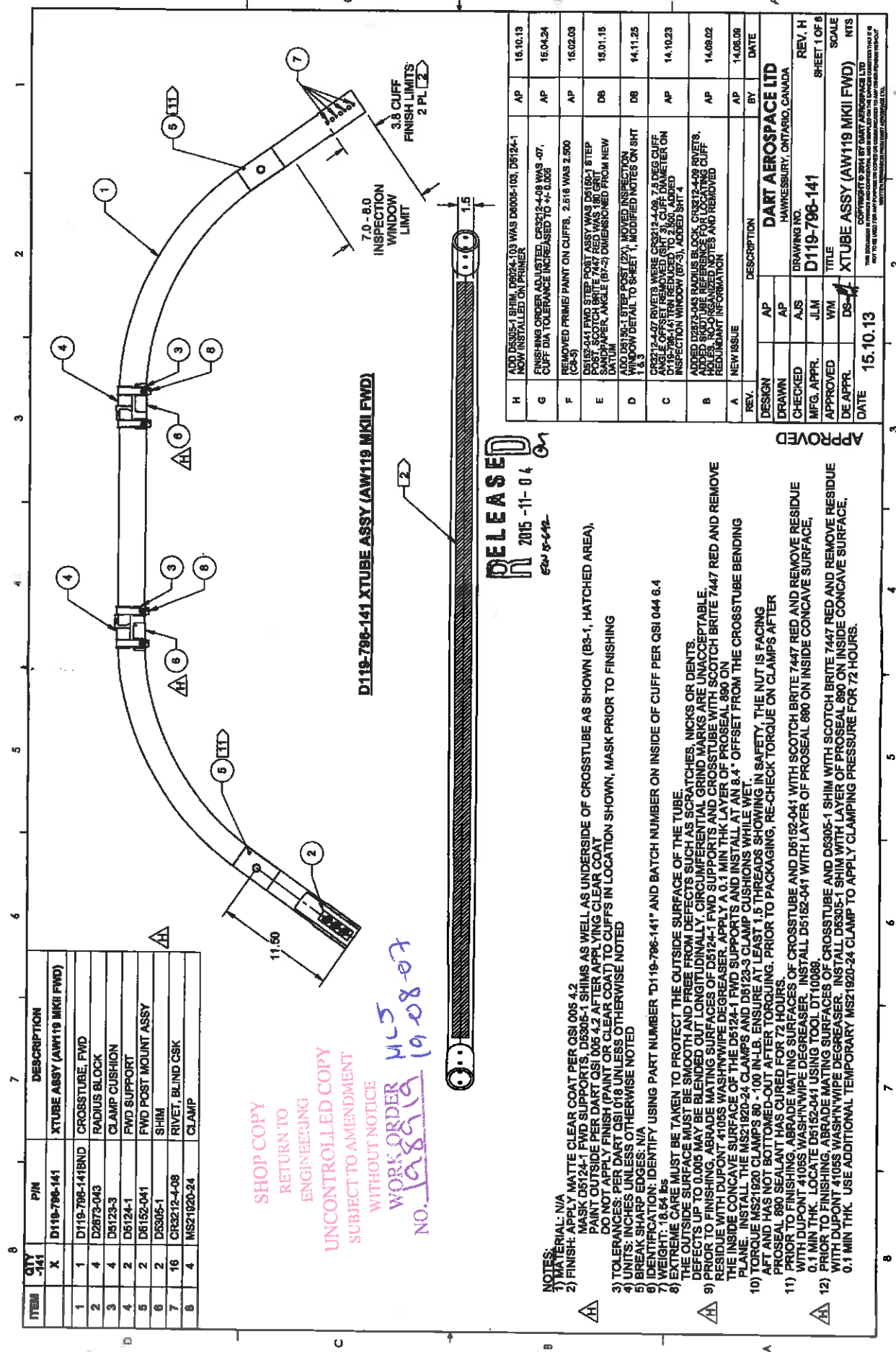
Date: 08/20/19

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DART AEROSPACE LTD	Work Order:	198919
Description: Crosstube Assembly (AW119 MKII Fwd)	Part Number:	D119-796-141TRN
Inspection Dwg: D119-796-141 Rev: H		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	6.00	+/-0.030	6.007	✓		CNC-08	
	2.516	+/-0.005	2.521	✓		CNC-04	
	2.333	+0.005/-0.000	2.337	✓		↓	
	2.333	+0.005/-0.000	2.338	✓			
	2.408	+0.005/-0.000	2.413	✓			
	2.502	+0.005/-0.000	2.507	✓			
	2.596	+0.005/-0.000	2.600	✓			
	2.596	+0.005/-0.000	2.601	✓			
SIDE B	6.00	+/-0.030	6.001	✓		CNC-08	
	2.516	+/-0.005	2.521	✓		CNC-04	
	2.333	+0.005/-0.000	2.338	✓		↓	
	2.333	+0.005/-0.000	2.338	✓			
	2.408	+0.005/-0.000	2.413	✓			
	2.502	+0.005/-0.000	2.507	✓			
	2.596	+0.005/-0.000	2.601	✓			
	2.596	+0.005/-0.000	2.601	✓			
	102.26	+/-0.020	102.26	✓		Tape	



D119-798-141 XTUBE ASSY (AW119 MKII FWD)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER 115
NO. 108919 190807

RELEASED
2015-11-04
6245-6-42

NOTES:

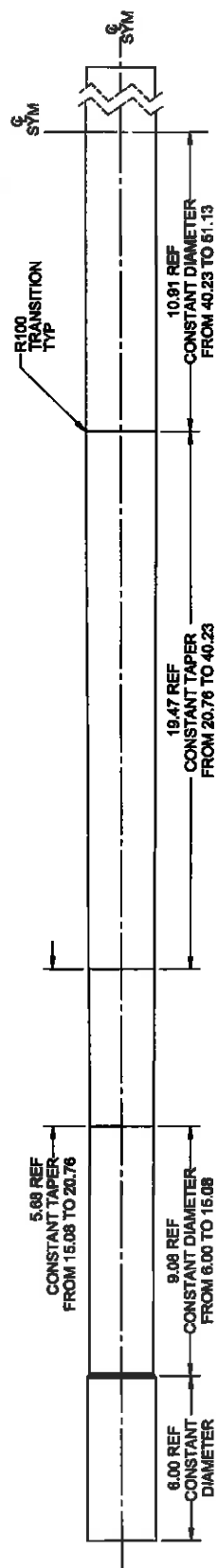
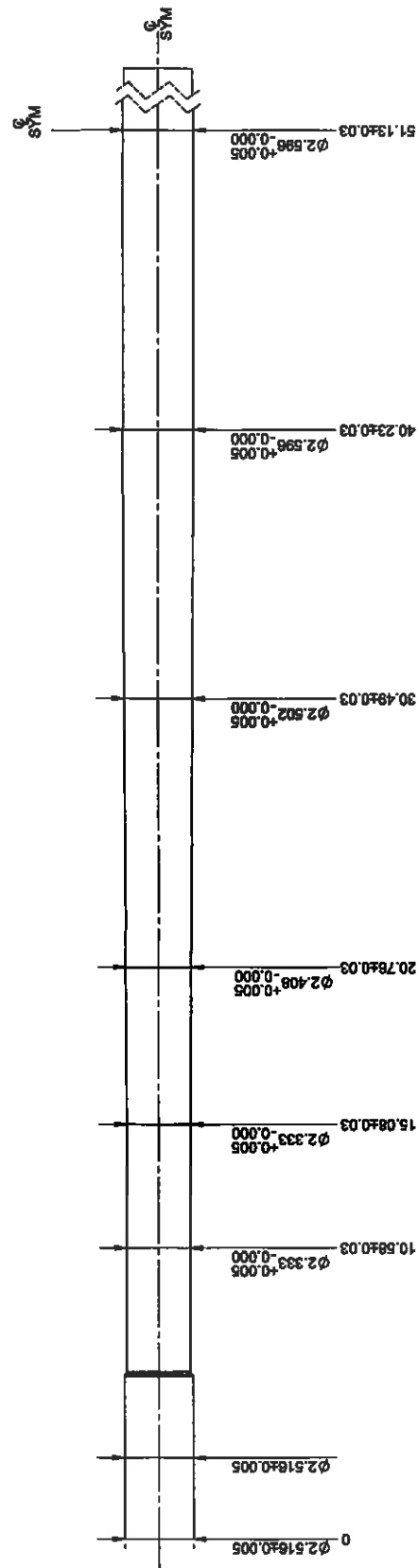
- 1) MATERIAL: N/A
- 2) FINISH: APPLY MATTE CLEAR COAT PER QSI 005 4.2
MASK D5124-1 FWD SUPPORTS, D5305-1 SHIMS AS WELL AS UNDERSIDE OF CROSSTUBE AS SHOWN (B3-1, HATCHED AREA).
DO NOT APPLY FINISH (PAINT OR CLEAR COAT) TO CUFFS IN LOCATION SHOWN, MASK PRIOR TO FINISHING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY USING PART NUMBER "D119-798-141" AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 8.4
- 7) WEIGHT: 18.54 LBS
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE.
DEFECTS UP TO 0.005 MAY BE BLENDED CUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
PRIOR TO FINISHING, ABRASIVE MATING SURFACES OF D5124-1 FWD SUPPORTS AND CROSSTUBE WITH SCOTCH BRITTE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41065 WASH/WIPE DEGREASER. APPLY A 0.1 MIN THK LAYER OF PROSEAL 880 ON INSIDE CONCAVE SURFACE OF THE D5124-1 FWD SUPPORTS AND INSTALL AT AN 8.4° OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL THE MS21920-24 CLAMPS AND D5123-3 CLAMP CUSHIONS WHILE WET.
- 10) TORQUE MS21920 CLAMPS 80 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY. THE NUT IS FACING AFT AND HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 880 SEALANT IS CURED FOR 72 HOURS.
- 11) PRIOR TO FINISHING, ABRASIVE MATING SURFACES OF CROSSTUBE AND D5124-041 WITH SCOTCH BRITTE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41065 WASH/WIPE DEGREASER. INSTALL D5124-041 WITH LAYER OF PROSEAL 880 ON INSIDE CONCAVE SURFACE, 0.1 MIN THK. LOCATE D5124-041 USING TOOL DT10088.
- 12) PRIOR TO FINISHING, ABRASIVE MATING SURFACES OF CROSSTUBE AND D5305-1 SHIM WITH SCOTCH BRITTE 7447 RED AND REMOVE RESIDUE WITH DUPONT 41065 WASH/WIPE DEGREASER. INSTALL D5305-1 SHIM WITH LAYER OF PROSEAL 880 ON INSIDE CONCAVE SURFACE, 0.1 MIN THK. USE ADDITIONAL TEMPORARY MS21920-24 CLAMP TO APPLY CLAMPING PRESSURE FOR 72 HOURS.

REV.	DESCRIPTION	BY	DATE
H	ADD D5305-1 SHIM, D5305-1 WAS D5305-103, D5124-1 NOW INSTALLED ON PRIMER	AP	15.10.13
G	FINISHING ORDER ADJUSTED, D5305-1 WAS -07, CUFF DIA TOLERANCE INCREASED TO +0.008	AP	15.04.24
F	REMOVED PRIMER/PAINT ON CUFFS, 2.516 WAS 2.500 (C4-5)	AP	15.02.09
E	D5124-041 FWD STEP POST ASSY WAS D5124-1 STEP POST, SCOTCH BRITTE 7447 RED WAS 180 GRIT	DB	15.01.15
D	ADD D5124-1 STEP POST (2X), MOVED INSPECTION WINDOW DETAIL TO SHEET 1, MODIFIED NOTES ON SHT 1 & 3	DB	14.11.25
C	CR3212-4-07 RIVETS WERE CR3212-4-09, 7.0 DEG CUFF INSPECTION WINDOW REMOVED TO 2.00, ADDED INSPECTION WINDOW (B7-3), ADDED SHT 4	AP	14.10.23
B	ADDED D5305-1 RADIUS BLOCK, CR3212-4-09 RIVETS, ADDED SCOTCH BRITTE 7447 RED, ADDED SCOTCH BRITTE 7447 RED AND REMOVE RESIDUE, NO ORGANIZED NOTES FOR LOCATING CUFF, REDUNDANT INFORMATION	AP	14.09.02
A	NEW ISSUE	AP	14.08.08
DESIGN	AP	BY	DATE
DRAWN	AP		
CHECKED	AP		
MFG. APPR.	JLM		
APPROVED	WM		
DE APPR.	DS-1		
DATE	15.10.13		

DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA
CHECKED	AP	
MFG. APPR.	JLM	DRAWING NO. D119-798-141
APPROVED	WM	TITLE
DE APPR.	DS-1	XTUBE ASSY (AW119 MKII FWD)
DATE	15.10.13	SCALE
		NTS

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8 7 6 5 4 3 2 1



D119-798-141TRN CROSSTUBE, FWD

- NOTES:**
- 1) MATERIAL: MANUFACTURE FROM D8024-103 (PREFERRED) OR D8005-103 FINISHED LENGTH = 102.28 ±0.020 (BEFORE BENDING/TRIMMING)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER PART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 18.70 lbs
 - 8) PART IS SYMMETRICAL ABOUT CENTERLINE

RELEASED
R 2015-11-04

DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HAWKESSBURY, ONTARIO, CANADA
CHECKED	ALIS	DRAWING NO.
MFG. APPR.	JLM	D119-798-141
APPROVED	WM	TITLE
DE APPR.	DS	XTUBE ASSY (AW119 MKII FWD)
DATE	15.10.13	SCALE
		NTS

REVISIONS
REV. H
SHEET 6 OF 8



Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only ☐

NCR No. _____

Job: _____ Part No. _____		DISPOSITION				DEPARTMENT/PROCESS				MRB (QS1042)	
Date: _____		Sequence #: _____		QTY Affected: _____		Cross tube		Eng. (Non-AW)		Engineering	
Description Work Order Deviation		Disposition		Completed By		Small Fab		Prod. Eng. Coord.		Water Jet	
						Finishing		Rec/Store/Packaging		Supplier	
						Large Fab				Quality	
Root Cause		Pressure/Forced		Contamination		Power Loss/Surge		Positioned Wrong			
Operator		Bending		Misaligned/off center		Folio/Program		Outside Tolerance			
Manufacturing Process		Crushing		BOM/Route		Grain Direction		Drawing			
Equip/Tooling		Cracks		Broken/Damage/Defect		Weld		Finish			
Handling/Preservation		Crimp/Kink/Ripple/Wave/Twist		Incomplete/Unclear Instructions		Wrong Stock Pulled		Part Lost/Missing			
Material		Marks/Chatter		Drill Holes		Out of Sequence		Misread			
Product Improvement		Mislabeled		Fit/Function		Off-set/Set-up					
Process Improvement		Other/Details:									
Human Factors											